

(19) World Intellectual Property Organization
International Bureau



05 OCT 2004



(43) International Publication Date
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number
WO 03/088511 A1

(51) International Patent Classification⁷: **H04B 1/04, H03F 1/32**

(21) International Application Number: **PCT/SE03/00459**

(22) International Filing Date: **19 March 2003 (19.03.2003)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
0201070-0 5 April 2002 (05.04.2002) **SE**

(71) Applicant: **TELEFONAKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-126 25 Stockholm (SE).**

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GRANSTRÖM, Anders [SE/SE]; Lidvägen 21 A, S-177 40 Järfälla (SE). JOHANSSON, Gunnar [SE/SE]; Tre Liljor 3, S-113 44 Stockholm (SE).**

(74) Agent: **AROS PATENT AB; P.O. Box 1544, S-751 45 Uppsala (SE).**

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

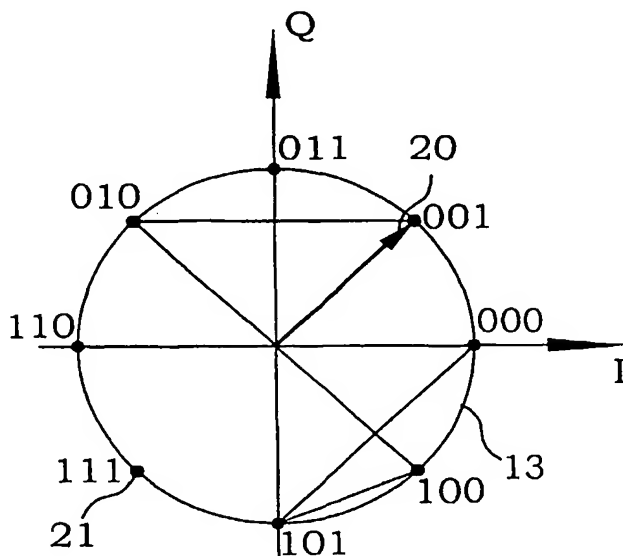
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **MULTIMODULATION TRANSMITTER**



(57) Abstract: The present invention discloses a double TRU (Transceiver Unit) (45). The output signals from the power amplifiers (64, 84) are combined to one common output signal provided to an antenna arrangement (91). A DSP (Digital Signal Processor) (52, 72) of each TRU (50, 70) comprises means for a constant-envelope modulation scheme (54, 74) and a non-constant envelope scheme (53, 73). The DSP:s (52, 72) select the modulation scheme according to modulation information (49, 69). In such a way, a switching between different modulation schemes can be performed even on a time-slot basis. For non-constant-envelope modulation, the modulated signal is separated into two component signals. Each TRU (50, 70) takes care of the amplification of one component. A phase compensation of at least one of the TRU:s (50, 70) is performed in order to correct for different paths of phases of the power amplifiers (64, 84). The non-constant envelope modulated signal can also be a multi-carrier signal, e.g. of two or more constant-envelope signals. Also a TCC (Transmitter Coherent Combining) operation is achievable.

WO 03/088511 A1